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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/795,800

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04/28/2009

EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT

PAPER NUMBER

1791

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/795,800	Applicant(s) MENENDEZ ET AL.	
	Examiner JEFFREY WOLLSCHLAGER	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-15 and 21-40 is/are pending in the application.
- 4a) Of the above claim(s) 11-15, 21-25 and 36-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 13, 2009 has been entered.

Response to Amendment

Applicant's amendment to the claims filed March 13, 2009 has been entered. Claim 26 is currently amended. Claims 1-10 and 16-20 have been canceled. Claims 11-15, 21-25 and 36-40 remain withdrawn from further consideration. Claims 26-35 are currently under examination.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 26-35 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7 and 14 of U.S. Patent No. 6,508,909 in view of either of Artz et al. (US 2002/0173575) or Younie et al. (US 5,817,269). Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 1 of U.S. Patent 6,508,909 claims a process for manufacturing a structural member from pre-cured element composite materials and green stiffeners (preamble) comprising: providing at least a first subcomponent of composite material (steps (a) and (b)); providing at least a second subcomponent of composite material (step (c)); attaching an expansion compensating tool/angle pieces to the second subcomponent (step (d)); placing the second subcomponent with said tooling on the first subcomponent and bonding it to the latter by means of an uncured structural adhesive (step (d)); covering the assembly with a vacuum bag (step (e)); performing an autoclave cycle for curing the curable material (step (f)); and withdrawing the assembly from the curing autoclave (step (f)).

Regarding claim 26 of the instant application, claim 1 of the '909 patent does not explicitly state the surface of the tooling is a surface rough enough to promote friction in an amount effective to achieve common thermal expansion. Claim 1 of the '909 patent also does not teach removing the angle pieces/tooling from the composite structure. However, this is implied in the '909 patent and would have been obvious to one having ordinary skill in the art in order to be able to reuse the angle pieces and to not provide unnecessary weight to the

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completed part. Further, each of Artz et al. and Younie et al. disclose a method of forming composite articles wherein the tooling is chosen such that it achieves a common thermal expansion with the component without requiring the tooling to have the same coefficient of thermal expansion.

It would have been obvious to one having ordinary skill to have employed tooling that achieves common thermal expansion as the component for the purpose, as suggested by either of Artz et al. or Younie et al. of facilitating production of a quality composite part. Claims 27-35 are conventional limitations rendered obvious by the prior art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 26 and 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cerezo Pancorbo et al. (EP 1134070) in view of either of Artz et al. (US 2002/0173575) or Younie et al. (US 5,817,269).

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Regarding claims 26 and 28, Cerezo Pancorbo et al. teach a process for manufacturing a monolithic composite structure from a precured and an uncured subcomponent comprising: providing at least a first subcomponent of composite material; providing at least a second subcomponent of composite material; attaching expansion compensating tooling/angle pieces to the second subcomponent; placing the second subcomponent with said tooling on the first subcomponent and bonding it to the latter by means of an uncured structural adhesive; covering the assembly with a vacuum bag; performing an autoclave cycle for curing the curable material; withdrawing the assembly from the curing autoclave (Abstract; paragraphs [0003, 0013, 0014, 0020, 0021, 0031, 0036, and 0038]; claim 1).

Cerezo Pancorbo et al. do not explicitly teach removing the angle pieces/tooling from the composite structure. However, this is implied and suggested in the reference and would have been obvious to one having ordinary skill in the art in order to be able to reuse the angle pieces for subsequent use and to not introduce unnecessary weight to the completed aeronautical wing. Additionally, Cerezo Pancorbo et al. do not explicitly state the surface of the tooling is a surface rough enough to promote friction in an amount effective to achieve common thermal expansion. However, each of Artz et al. (Abstract; paragraphs [0003-0008; 0013; 0020-0021; 0024-0027 and 0046]) and Younie et al. (claim 1, step (e) – the tool matches the thermal expansion characteristics of the prepreg, but comprises materials having CTE's different than the prepreg, by varying thicknesses, etc.; Figure 14; col. 1, lines 62-65; col. 2, line 55-col. 3, line 47; col. 8, lines 13-17; col. 10, lines 14-64; col. 11, lines 23-37) discloses a method of forming composite articles wherein the tooling is chosen such that it achieves a common thermal expansion with the components. The examiner notes that Artz et al. do not require the coefficient of thermal expansion to be the same, but only requires that they be "similar enough" (paragraph [0006]) to achieve common thermal expansion. The examiner notes that since the

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tools employed by either of Artz et al. or Younie et al. achieve the desired thermal expansion they are reasonably considered “rough enough”

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Cerezo Pancorbo et al. and to have employed the tooling suggested by either of Artz et al. or Younie et al. for the purpose of facilitating the production of a quality composite article.

As to claim 29, the first component taught by Cerezo Pancorbo et al. is an aircraft skin and the second component is a stiffener (paragraphs [0013 and 0014]).

As to claims 30 and 31, Cerezo Pancorbo et al. teach the tooling consists of L-shaped metal beams adapted to the geometry of the second component (Figure 2 (4, 4’); paragraph [0020]). Additionally, Artz et al. suggest matching the shape of the tooling to the part as appropriate.

As to claim 32, the metal tooling/angle piece surfaces taught by Cerezo Pancorbo et al. would have necessarily been machined in order to produce the part.

As to claim 33, Artz et al. employ materials such as microspheres (paragraph [0024, 0025]). These are understood to be “friction enhancers”.

As to claim 34, Cerezo Pancorbo et al. employ first and second composite components (Abstract; claim 1).

As to claim 35, Cerezo Pancorbo et al. employ temperatures and pressures within the vacuum bagging and autoclaving step implicitly within recommended ranges in order to produce a viable product (paragraphs [0036-0038]; claim 1). These values would have been readily optimized by the ordinarily skilled artisan.

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Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cerezo Pancorbo et al. (EP 1134070) in view of either of Artz et al. (US 2002/0173575) or Younie et al. (US 5,817,269), as applied to claims 26 and 28-35 above, and further in view of Wilden et al. (U.S. Patent 5,242,523).

As to claim 27, the combination teaches the method set forth above. Cerezo Pancorbo et al. do not teach using a precured second component. However, in an analogous method, Wilden et al. (col. 4, lines 58-65) teach that either precured or uncured second components may be used.

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have utilized precured second components, such as the stiffener/stringer components as taught by Wilden et al., because they are easier and cleaner to handle and are able to provide a support structure immediately with the initial application to the first component.

Claims 26, 27, and 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breur et al. (U.S. Patent 6,306,239) in view of either of Artz et al. (US 2002/0173575) or Younie et al. (US 5,817,269).

Regarding claims 26 and 27, Breur et al. teach a process for manufacturing a monolithic composite structure from precured subcomponents comprising: providing at least a first subcomponent of composite material; providing at least a second subcomponent of composite material; attaching expansion compensating tooling/strengthening profile members to the second subcomponent, placing the second subcomponent with said tooling on the first subcomponent and bonding it to the latter by means of an uncured structural adhesive; covering the assembly with a vacuum bag; performing an autoclave cycle for curing the curable material;

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withdrawing the assembly from the curing autoclave; and removing the tooling to obtain a monolithic composite structure (Abstract; Figure 2 (3) (7); Figure 3; col. 6, lines 9-22; col. 7, lines 4-38; col. 8, lines 13-17). Breur et al. further teach the tooling contains "protruding webs" (col. 7, lines 22-38). However, each of Artz et al. (Abstract; paragraphs [0003-0008; 0013; 0020-0021; 0024-0027 and 0046]) and Younie et al. (claim 1, step (e) – the tool matches the thermal expansion characteristics of the prepreg, but comprises materials having CTE's different than the prepreg, by varying thicknesses, etc.; Figure 14; col. 1, lines 62-65; col. 2, line 55-col. 3, line 47; col. 8, lines 13-17; col. 10, lines 14-64; col. 11, lines 23-37) disclose a method of forming composite articles wherein the tooling is chosen such that it achieves a common thermal expansion with the components. The examiner notes that Artz et al. do not require the coefficient of thermal expansion to be the same, but only requires that they be "similar enough" (paragraph [0006]) to achieve common thermal expansion. The examiner notes that since the tools employed by either of Artz et al. or Younie et al. achieve the desired thermal expansion they are reasonably considered "rough enough"

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the method of Breur et al. and to have employed the tooling suggested by either of Artz et al. or Younie et al. for the purpose of facilitating the production of a quality composite article.

As to claim 29, the first component taught by Breur et al. is an aircraft skin and the second component is a stiffener (Abstract; col. 1, lines 11-22; col. 5, lines 22-33).

As to claims 30 and 31, Breur et al. teach the tooling consists of L-shaped metal beams adapted to the geometry of the second component (col. 7, lines 5-28; Figure 2). Additionally, Artz et al. suggest matching the shape of the tooling to the part as appropriate. Artz et al. disclose inclusion of metallic material in the tooling (paragraph [0027]).

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As to claim 32, the metal tooling surface taught by Breur et al. would have necessarily been machined in order to produce the part.

As to claim 33, Artz et al. employ materials such as microspheres (paragraph [0024, 0025]). These are understood to be “friction enhancers”.

As to claim 34, Breur et al. employ first and second composite components (Abstract).

As to claim 35, Breur et al. employ temperatures and pressures within the vacuum bagging and autoclaving steps implicitly within recommended ranges in order to produce a viable, high quality, product (col. 7, lines 30-40). These values would have been readily optimized by the ordinarily skilled artisan.

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cerezo Pancorbo et al. (EP 1134070) in view of either of Artz et al. (US 2002/0173575) or Younie et al. (US 5,817,269), as applied to claims 26, 28-32, 34 and 35 above, and further in view of Kline et al. (US 6,045,651). *Note: This is an alternative rejection to the rejection of claim 33 above.*

As to claim 33, the combination teaches the method set forth above. Cerezo Pancorbo do not teach employment of a sandpaper roughened tooling. However, Kline et al. teach a method of producing an analogous composite material where plies of material are held in place with grit/sand strips (Figure 5; col. 10, lines 47-62).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the tooling employed by Cerezo Pancorbo and to have employed grit/sand strips with the tooling, as suggested by Kline et al., for the purpose of improving the ability to hold the plies in place during the process.

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Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breur et al. (U.S. Patent 6,306,239) in view of either of Artz et al. (US 2002/0173575) or Younie et al. (US 5,817,269), as applied to claims 26, 27, 29-32, 34 and 35 above, and further in view of Kline et al. (US 6,045,651). *Note: This is an alternative rejection to the rejection of claim 33 above.*

As to claim 33, the combination teaches the method set forth above. Breur et al. do not teach employment of a sandpaper roughened tooling. However, Kline et al. teach a method of producing an analogous composite material where plies of material are held in place with grit/sand strips (Figure 5; col. 10, lines 47-62).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have modified the tooling employed by Cerezo Pancorbo and to have employed grit/sand strips with the tooling, as suggested by Kline et al., for the purpose of improving the ability to hold the plies in place during the process.

Response to Arguments

Applicant's arguments filed March 13, 2009 have been fully considered. In view of the amendment to claim 26, the rejections previously including the secondary reference Sakatani et al. (JP 58203014) have been withdrawn. Applicant's arguments directed to the Artz et al. reference have been fully considered, but they are not persuasive. Applicant argues that Artz et al. suggest employing a tooling that has a coefficient of thermal expansion that is the same as the coefficient of thermal expansion of the second component. This argument is not persuasive. The examiner submits that the teaching of Artz et al. is directed to tailoring the coefficient of thermal expansion of the tooling so that it is "similar enough" to the composite material in order to achieve geometrical accuracy and reduced residual stress in the product (paragraphs [0003, 0006]). Thus, while Artz et al. certainly intends to produce a tool with a CTE relatively close to

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the CTE of the component, and could even produce a tool with matching CTE's, the exact CTE of the tool of Artz et al. is secondary to the result associated with using the tooling of Artz et al. (i.e. common expansion). In the combination, the tooling of Artz et al. is exposed to the heat and pressure of the vacuum bag/autoclave process. Accordingly, it follows that the CTE of the tooling of Artz et al. would have been chosen so that it is "similar enough" to the component such that the change of shape of the tool and the component is the same (paragraph [0006]).

Further, it is noted that the examiner has set forth an alternative grounds of rejection including the Younie et al. reference (US 5,817,269).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY WOLLSCHLAGER whose telephone number is (571)272-8937. The examiner can normally be reached on Monday - Thursday 6:45 - 4:15, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Jeff Wollschlager/
Examiner, Art Unit 1791

April 28, 2009